**IN THE CLAIMS:**

**A. Please cancel claims 18-20 without prejudice or disclaimer.**

**B. Please amend claims 1, 5-9, 11, 12, 14, and 17 as follows:**

**Amended Claims With Mark-ups to Show Changes Made**

1. (currently amended) An electro-optic device comprising:

a substrate;~~and~~

an integrated optical waveguide extending across the substrate; and ;

means arranged to apply an electrical signal across the waveguide via two doped regions to alter attenuation properties and/or a refractive index of the waveguide by ~~being provided such that an electrical signal can be applied across the doped regions to alter~~ altering the density of charge carriers within the waveguide, the two doped regions each comprising a plurality of doped areas spaced apart from each other in a direction parallel to ~~along~~ the length of the waveguide the size and spacing of the doped areas being selected so that the efficiency of the device, in terms of the increase in attenuation or change in refractive index per unit current applied thereto, is increased.

2. (previously amended) The electro-optic device as claimed in claim 1, wherein the spacing between adjacent doped areas is in the range of 250 to 300 microns.

3. (previously amended) The electro-optic device as claimed in claim 1, wherein each of the doped areas has a length in a direction along the waveguide of at least 1 mm.

B2 Cont'd

4. (previously amended) The electro-optic device as claimed in claim 1, wherein each of the doped areas has a length in a direction along the waveguide of 10 mm or less.

5. (currently amended) An electro-optic device as claimed in claim 1, wherein the doped regions each comprise at least four doped areas spaced part from each other in a direction parallel to ~~along~~ the length of the waveguide.

6. (currently amended) ~~An~~ The electro-optic device as claimed in claim 1, wherein the doped areas form p-i-n diodes across the waveguide.

7. (currently amended) ~~An~~ The electro-optic device as claimed in claim 6, wherein the doped areas are arranged in an alternating sequence of p-doped areas and n-doped areas in a direction parallel to ~~along~~ the length of the waveguide.

8. (currently amended) ~~An~~ The electro-optic device a claimed in claim 1, wherein the waveguide comprises silicon.

9. (currently amended) ~~An~~ The electro-optic device as claimed in claim 8, wherein the waveguide is a silicon rib waveguide.

B2 cont. 4

10. (previously amended) The electro-optic device as claimed in claim 1, wherein the two doped regions are provided on opposite sides of the waveguide.

11. (currently amended) The electro-optic device as claimed in claim 10, wherein the two doped regions are provided in areas of silicon adjacent the rib waveguide.

12. (currently amended) The electro-optic device as claimed in claim 1, wherein the waveguide has a substantially straight portion and the two doped regions are arranged so that the density of charge carriers can be altered within said substantially straight portion of the waveguide.

13. (previously amended) The electro-optic device as claimed in claim 1, wherein the doped areas are electrically connected so a plurality of diodes formed thereby are connected in series.

B2 Ex 1

14. (currently amended) The electro-optic device as claimed in claim 1, wherein electrical connections to and/or between the doped areas are provided by ~~electrical contacts~~ metallizations.

15. (previously amended) The electro-optic device as claimed in claim 1, wherein the device is used as an adjustable attenuator.

16. (previously amended) The electro-optic device as claimed in claim 1, wherein the device is used as a phase modulator.

17. (currently amended) An electro-optic device comprising:

a substrate; and

an integrated optical waveguide extending across the substrate, wherein the waveguide comprises a series of two or more curved portions curving in alternating directions, each having an n-doped region adjacent an outer side of the curved portions and a p-doped region adjacent an inner side of the curved portion so as to form a series of diodes of alternating polarity along the length of the waveguide. ~~at least one portion of the waveguide being curved, two doped regions being provided such that an electrical signal can be applied across the doped regions to alter the density of charge carriers within the curved portion of the waveguide.~~

{18-20 (canceled)}